Neural stem cells reverse Alzheimer's symptoms in mice

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Researchers at the University of California, Irvine have reversed Alzheimer's-like symptoms in a mouse model of the disease with injections of neural stem cells. The mice used in this study mimicked the human disease, showing learning and memory defects and accumulating both beta-amyloid plaques and tau protein tangles within the brain, the two hallmark pathologies of the disease. Mice that received injections of mouse neural stem cells performed significantly better in memory tests than mice that received control injections. The stem cells did not replace cells lost to the disease. Instead, the injected cells secreted a protein known as brain-derived neurotrophic factor (BDNF), that helped nourish the surviving neurons, encouraging those cells to grow more fibers and form more connections. The injected cells did not reduce the plaques or tangles. Current therapies for Alzheimer's disease can only reduce the severity of symptoms or slow progression. To date, this is only the second potential treatment shown to actually improve memory in mice with advanced plaque and tangle pathology.

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